

**Light Emitting Diode Utilizing a Discrete Wavelength-Converting Layer for Color  
Conversion**

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**ABSTRACT**

A method for fabrication of a light source and the light source fabricated by that  
10 method are disclosed. The light source is fabricated by mounting a chip having a primary  
light source on a substrate, the primary light source emitting light of a first wavelength. The  
chip is connected to power terminals on the substrate for powering the primary light source. A  
preformed transparent cap of constant thickness is mounted over the chip. The cap includes a  
wavelength converting material for converting a portion of the light of the first wavelength to  
15 a second wavelength. The primary light source is preferably an LED or laser diode. In one  
embodiment, the cap includes a phosphor that is suspended in a clear compound. In another  
embodiment, the cap includes a planar sheet of a single crystal phosphor.